

**Amendments to the Specification:**

Please delete the Heading and Subheading on page 1, lines 1 and 2 of the specification as shown below:

**Specification**

~~Title of the Invention~~

Please rewrite the paragraph bridging page 2, lines 20—page 3, line 16 as follows:

To attain the above object, an external noise intrusion prevention device according to one embodiment of the present invention ~~recited in claim 1~~ is an external noise intrusion prevention device having an input terminal and an output terminal connectable to a coaxial cable, and including: a first filter circuit letting a signal in a predetermined frequency band pass, the input terminal and the output terminal connected to each other through the first filter circuit; a second filter circuit letting a signal in a predetermined frequency band different from the predetermined frequency band pass; and a noise elimination circuit connected between the input terminal and the output terminal through the second filter, characterized in that the noise elimination circuit is formed by cascading two connection transformers each having a primary winding and a secondary winding. The two connection transformers is a front connection transformer and a rear connection transformer, one end of the primary winding of the front connection transformer is connected to a core on the input terminal side and the other end of the primary winding of the front connection transformer is connected to an input-side ground section. Further, one end of the secondary winding of the rear connection transformer is connected to a

core on the output terminal side and the other end of the secondary winding of the rear connection transformer is connected to an output-side ground section.

**Please rewrite the paragraph bridging page 3, line 17--page 4, line 8 as follows:**

An external noise intrusion prevention device according to a second embodiment of the present invention recited in claim 2 is an external noise intrusion prevention device having an input terminal and an output terminal connectable to a coaxial cable, and including: a first filter circuit letting a signal in a predetermined frequency band pass, the input terminal and the output terminal connected to each other through the first filter circuit; a second filter circuit letting a signal in a predetermined frequency band different from the predetermined frequency band pass; and a noise elimination circuit connected between the input terminal and the output terminal through the second filter, characterized in that the noise elimination circuit consists of a transformer having a ~~turns~~-turn ratio of 1 to 1. One end of a primary winding of the transformer is connected to a core on the input terminal side and the other end of the primary winding is connected to an input-side ground section. Further, one end of a secondary winding of the transformer is connected to a core on the output terminal side and the other terminal of the secondary winding is connected to an output-side ground section.

Please rewrite the paragraph on page 4, lines 9-12 as follows:

~~The invention recited in claim 3 according~~According to a  
third embodiment of the present invention recited in claim 1  
~~or 2,~~ the noise intrusion prevent device according to the  
first or second embodiments is characterized in that the  
input-side ground section is connected to the output-side  
ground section to prevent a direct current from passing.

Please rewrite the paragraph on page 4, lines 13-19 as follows:

~~A protector according~~According to a fourth embodiment of  
the present invention recited in claim 4 is, a protector is  
provided having an arrester and a choke coil, and preventing  
an abnormal voltage entering from an input terminal from  
flowing from an output terminal, characterized in that the  
protector includes an external noise intrusion prevention  
device according to any one of ~~claims 1 to 3~~the above  
embodiments, the external noise intrusion prevention device  
provided in an output terminal section.

Please rewrite the paragraph on page 4, lines 20-27 as follows:

~~A signal amplifier according~~According to a fifth  
embodiment of the present invention recited in claim 5 is, a  
signal amplifier is provided midway along a bi-directional  
CATV trunk letting an up signal and a down signal pass, and  
amplifying at least the down signal from a center station,~~and~~  
~~characterized in that the.~~ The signal amplifier includes an  
external noise intrusion prevention device according to ~~claim~~  
~~1 or 2~~the first or second embodiments above, the external

noise intrusion prevention device provided in an output section outputting the down signal.

**Please rewrite the paragraph on page 5, lines 1-18 as follows:**

~~A signal amplifier according~~According to a sixth embodiment of the present invention recited in claim 6 is, a signal amplifier is provided midway along a bi-directional CATV trunk letting an up signal and a down signal pass, and amplifying at least the down signal from a center station, characterized in that the signal amplifier includes a noise elimination circuit provided in an output section outputting the down signal. The amplifier consists of a pair of connection transformers, and the pair of connection transformer is a front connection transformer and a rear connection transformer cascaded to each other. One end of a primary winding of the front connection transformer is connected to the output section and the other end of the primary winding of the front connection transformer is connected to a ground section of the output section. Further, one end of a secondary winding of the rear connection transformer is connected to a core of an output terminal of the signal amplifier and the other end of the secondary winding of the rear connection transformer is connected to a ground section of the output terminal.

**Please rewrite the paragraph bridging page 5, line 19--page 6, line 5 as follows:**

~~A signal amplifier according~~According to a seventh embodiment of the present invention recited in claim 7 is, a signal amplifier is provided midway along a bi-directional

CATV trunk letting an up signal and a down signal pass, and amplifying at least the down signal from a center station, characterized in that the signal amplifier includes a noise elimination circuit provided in an output section outputting the down signal. The amplifier consists of a transformer having a ~~turn's~~turn ratio of 1 to 1, and one end of a primary winding of the transformer connected to the output section and the other end of the transformer is connected to a ground section of the output section. One end of a secondary winding of the transformer is connected to a core of an output terminal of the signal amplifier and the other end of the secondary winding of the transformer is connected to a ground section of the output terminal.

**Please rewrite the paragraph on page 6, lines 6-11 as follows:**

~~An antenna plug according~~According to an eighth embodiment of the present invention recited in claim 8 is characterized by, an antenna plug is provided having two coaxial cable connection terminals on both ends, respectively, and including an external noise intrusion prevention circuit according to any one of ~~claims 1 to 3,~~ the first through third embodiments. The external noise intrusion prevention device is interposed between the two coaxial cable connection terminals.

**Please rewrite the paragraph bridging page 6, line 12—page 7, line 6 as follows:**

~~An antenna plug according~~According to a ninth embodiment of the present invention recited in claim 9 is, an antenna plug is provided having two coaxial cable connection terminals

on both ends, respectively, and having an external noise intrusion prevention circuit interposed between the two coaxial cable connection terminals, ~~characterized in that the~~. The noise elimination circuit is formed by cascading two connection transformers each having a primary winding and a secondary winding. The two connection transformers are a front connection transformer and a rear connection transformer. One end of the primary winding of the front connection transformer is connected to a core of one of the coaxial cable connection terminals or one of F-type connection terminals and the other end of the primary winding of the front connection transformer is connected to a ground section of one of the coaxial cable connection terminals or one of the F-type connection terminals. Further, one end of the secondary winding of the rear connection transformer is connected to a core of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals and the other end of the secondary winding of the rear connection transformer is connected to a ground section of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals.

**Please rewrite the paragraph on page 7, lines 7-24 as follows:**

~~An antenna plug according~~According to a tenth embodiment of the present invention recited in claim 10 is, an antenna plug is provided having two coaxial cable connection terminals on both ends, respectively, and having an external noise intrusion prevention circuit interposed between the two coaxial cable connection terminals, characterized in that the

noise elimination circuit consists of a transformer having a ~~turn's~~ turn ratio of 1 to 1. Further, one end of a primary winding of the transformer is connected to a core of one of the coaxial cable connection terminals or one of F-type connection terminals and the other end of the primary winding of the transformer is connected to a ground section of one of the coaxial cable connection terminals or one of the F-type connection terminals. One end of the secondary winding of the transformer is connected to a core of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals and the other end of the secondary winding of the transformer is connected to a ground section of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals.

Please rewrite the section heading on page 8, line 23 as follows:

Detailed Description of the Preferred EmbodimentsInvention

Please rewrite the paragraph on page 12, lines 3-15 as follows:

The ~~turn's~~ turn ratio of the primary winding to the secondary winding of each connection transformer may be 1 to 1 or not. As shown in FIG. 2, the primary winding and the secondary winding may be formed at a ~~turn's~~ turn ratio of 1 to N (where N is an integer). In that case, the rear connection transformer may be set to have a ~~turn's~~ turn ratio of N to 1 symmetrical to the ~~turn's~~ turn ratio of the front connection transformer. Further, one of or both of the centers of the windings are not necessarily grounded. In addition, as long

as the both transformers have the same characteristic in a target noise frequency range, one may have low pass characteristic and the other may have high pass characteristic. By doing so, it is possible to maintain good transformer characteristic in a wide frequency range.

**Please rewrite the paragraph bridging page 15, line 19--page 16, line 1 as follows:**

FIG. 7 is a circuit block diagram which shows the second embodiment of the external noise intrusion prevention circuit according to the present invention. The difference between the external noise intrusion prevention circuit shown in FIG. 7 and that shown in FIG. 1 is the configuration of the noise elimination circuit 6. In case of FIG. 7, the noise elimination circuit 10 is formed out of a transformer 6c having a ~~turns~~-turn ratio of 1 to 1. More specifically, the transformer 6c is constituted so that a primary winding and a secondary winding are wound around a ring-shaped ferrite core by five turns, respectively.

**Please rewrite the paragraph on page 16, lines 2-17 as follows:**

FIG. 8 shows the comparison in the noise intrusion rate characteristic of the external noise intrusion prevention device between the configuration shown in FIG. 7 and that shown in FIG. 1. The noise intrusion rate characteristics shown in FIG. 8 are measured by the same method as that of the characteristics shown in FIG. 4. That is to say, these characteristics are obtained each by applying a signal corresponding to noise, between the output-side ground section and the input-side ground section and measuring the



attenuation of the noise corresponding signal appearing between the core of the input terminal 1 and the ground. In FIG. 8, a thick curve J indicates the characteristics of the device shown in FIG. 7 and a thin curve K indicates the characteristic of the device shown in FIG. 1. It is noted that the front transformer has a ~~turn's~~ turn ratio of 5 to 7 and the rear transformer has a ~~turn's~~ turn ratio of 7 to 5 in the device having the characteristic K.

**Please rewrite the paragraph on page 16, lines 18-26 as follows:**

As shown in FIG. 8, even if the transformer 6c having a ~~turns~~ turn ratio of 1 to 1 is used as the noise elimination circuit, the characteristic J is lower than the characteristic K by 2 to 3 dB with frequencies of 20 MHz or lower. However, the device show in FIG. 7 can obtain a similar effect to that of the device shown in FIG. 1 and prevent the intrusion of noise. In addition, it suffices to use only one transformer in the device shown in FIG. 7, thereby making it possible to effectively utilize space and reduce cost.

**Please rewrite the paragraph bridging page 16, line 27—page 17, line 12 as follows:**

Accordingly, when a protector as shown in FIG. 3 is formed using an external noise intrusion prevention circuit formed out of this transformer 6c having a ~~turns~~ turn ratio of 1 to 1, it is possible to prevent the intrusion of noise from a terminal equipment into a trunk. Likewise, when a signal amplifier as shown in FIG. 5 is formed using this external noise intrusion prevention circuit, it is possible to

eliminate external noise entering between a signal amplifier and a protector provided on a trunk. Furthermore, when an antenna plug as shown in FIG. 6 is formed using this external noise intrusion prevention circuit, it is possible to prevent noise produced in a television receiver from intruding from the antenna terminal of the television receiver into a CATV system.

**Please rewrite the paragraph on page 17, lines 17-22 as follows:**

As stated so far in detail, the external noise intrusion prevention device according to the ~~inventions recited in claims 1 to 3~~first through third embodiments of the present invention can prevent the intrusion of noise in an up signal frequency band with a simple configuration. In addition, when filter circuits are provided, it is possible to design the circuit for limited frequencies and to thereby simplify circuit design.

**Please rewrite the paragraph on page 17, lines 23-26 as follows:**

The protector according to the fourth embodiment of the present invention ~~recited in claim 4~~ can eliminate noise intruded between the terminal equipment such as a television receiver and the protector besides the inherent function as the protector.

**Please rewrite the paragraph bridging page 17, line 27—page 18, line 2 as follows:**

The signal amplifier according to the ~~inventions recited in claims 5 to 7~~fifth through seventh embodiments of the present invention can eliminate intruded noise between the signal amplifier and the protector.

**Please rewrite the paragraph on page 18, lines 3-9 as follows:**

The antenna plug according to the ~~inventions recited in claims 8 to 10~~eighth through tenth embodiments of the present invention can eliminate external noise intruded into the antenna terminal of the television receiver only if the antenna plug is connected to the television receiver. In addition, the antenna plug can prevent noise produced in the television receiver from intruding from the antenna terminal of the television receiver into the CATV system.